AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): A driving waveform generator that generates a driving waveform to drive a driving element, said driving waveform generator comprising:

a memory that stores a plurality of gradient data, each representing a local gradient of the driving waveform;

an accumulator that successively sums up one of the gradient data stored in said memory at each of a plurality of calculation periods;

a digital-to-analog converter that converts only specific upper columns in a result of summation obtained by said accumulator at each calculation period into an analog signal; and

a correction unit that corrects the result of summation to a preset value under a specific condition.

2. (original): A driving waveform generator in accordance with claim 1, wherein said correction unit corrects residual lower columns other than the specific upper columns in the result of summation to zero at a predetermined timing.

3. (original): A driving waveform generator in accordance with claim 2, wherein the result of summation is expressed by a predetermined number of bits in a binary number system, and

said correction unit carries out the correction by clearing specific lower bits corresponding to said residual lower columns.

4. (original): A driving waveform generator in accordance with claim 1 further comprising:

a second memory that stores the preset value,

wherein said correction unit executes the corrections by replacing the result of summation with the preset value stored in

said second memory at a predetermined timing.

5. (original): A driving waveform generator in accordance with claim 1, wherein said correction unit corrects the result of summation to a value corresponding to the starting voltage at the end of each period of the driving waveform so that the driving waveform is a periodical waveform in which a terminal voltage at a terminal end of each period is equal to a starting voltage at a start end of the period.

6. (previously presented): A driving waveform generator in accordance with claim 1, wherein when the result of summation is to exceed a preset range within an available numerical range of the result of summation by the accumulator, said correction unit corrects the result of summation to a predetermined value which is close to a boundary value of the preset range.

7. (previously presented): A driving waveform generator in accordance with claim 6, wherein the gradient data and the result of summation are expressed by a two's complement,

the preset range is coincident with the available numerical range of said accumulator,

said accumulator outputs a state of carry in the summation as a carry bit, and

said correction unit carries out the correction when a most significant bit representing a sign of the gradient data and the carry bit have values of a predetermined combination.

8. (original): A driving waveform generator in accordance with claim 6,

wherein said accumulator comprises:

an adder that sums up two data and outputs a result of addition;

a first latch that temporarily holds the gradient data and inputs the gradient data into said adder; and

a second latch that temporarily holds the result of addition output from said adder and inputs the result of addition into said adder,

wherein said correction unit corrects either one of an input and an output of said second latch.

9. (original): A driving waveform generator in accordance with claim 8, wherein said correction unit corrects either one of the input and the output of said second latch to an upper limit value in the preset range when the result of summation exceeds the upper limit, and corrects either one of the input and the output of said second latch to a lower limit value in the preset range when the result of summation exceeds the lower limit.

10. (currently amended): A printing apparatus that ejects ink to print an image comprising:

a print head having a nozzle and a driving element that drives said nozzle; and

a driving waveform generator for generating a driving waveform that is applied to said driving element,

wherein said driving waveform generator ~~includingincludes~~,

a memory that stores a plurality of gradient data, each representing a local gradient of the driving waveform;

an accumulator that successively sums up one of the gradient data stored in said memory at each of a plurality of calculation periods;

a digital-to-analog converter that converts only specific upper columns in a result of summation obtained by said accumulator at each calculation period into an analog signal; and

a correction unit that corrects the result of summation to a preset value under a specific condition.

11. (previously presented): A method of generating a driving waveform to drive a driving element, said method comprising the steps of:

(a) successively summing up gradient data, each representing a local gradient of the driving waveform, at each of a plurality of preset calculation periods;

(b) converting only specific upper columns in a result of summation obtained in said step (a) at each preset calculation period into an analog signal; and

(c) correcting the result of summation to a preset value under a specific condition.

12. (original): A method in accordance with claim 11, wherein said step © includes the step of correcting residual lower columns in the result of summation other than the specific upper columns to zero at a predetermined timing.

13. (original): A method in accordance with claim 11, wherein said step © includes the step of when the result of summation is to exceed a preset range within an available numerical range of the result of summation, correcting the result of summation to a predetermined value which is close to a boundary value of the preset range.